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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/575,021   | 04/07/2006  | Russell Vaughan Meddes | 06-225              | 7051             |
| 20306 7590 11/24/2010<br>MCDONNELL BOEHNNEN HULBERT & BERGHOFF LLP<br>300 S. WACKER DRIVE<br>32ND FLOOR<br>CHICAGO, IL 60606 |             |                        |                     |                  |
| EXAMINER   |             |                        |                     |                  |
| BERGIN, JAMES S  |             |                        |                     |                  |
| ART UNIT   |             | PAPER NUMBER           |                     |                  |
| 3641   |             |                        |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/575,021

**Applicant(s)**

MEDDES ET AL.

**Examiner**

JAMES S. BERGIN

**Art Unit**

3641

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/6/2009 & 7/30/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 10-23, 25 and 27-32 is/are pending in the application.
- 4a) Of the above claim(s) 15, 16, 19-23, 25, 27 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 10-14, 17, 18 and 29-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1, 10-18 and 29-32, the species wherein the filler is a flake (claim 15) and the species wherein the filler is a metallic material (claim 32), in the reply filed on 7/30/2010 is acknowledged. The traversal is on the ground(s) that "there is absolutely no disclosure in DE3424867 of a liner that includes the special technical feature of a liner that includes a first portion and a second portion, the first and second portions comprising different ratios of filler to matrix. This is not found persuasive because in the restriction mailed 11/23/2009 (*note that the 11/23/2009 restriction replaced the 4/13/2009 restriction*), there is no mention of DE3424867, Collins et al. US 6,371,219 being references instead. In any event, all of the invention groups 1-VI do not share the special technical feature of a liner that includes a first portion and a second portion, the first and second portions comprising different ratios of filler to matrix. Therefore unity of invention does not exist.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 15, 16, 19-23, 25, 27 and 28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and/or species of the invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/30/2010.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 29, 30, 32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Collins et al. (US 6,371,219 B1). The following interpretation of the Collins et al. reference replaces the previous interpretation presented in the non-final rejection mailed on 8/19/2008.

Regarding claims 1 and 32, Collins et al. clearly disclose a shaped charge perforator 24 for mounting in a perforating gun 12, the gun 12 used in a method of forming perforations in a well-bore (col. 2, lines 30 – 41; Figs. 1, 2). Collins et al. disclose that the liner 28 of the shaped charge are made from a molding which comprises a metallic loaded polymer matrix (col. 2, line 42 – col. 3, line 60). It is inherent that the metal of the metallic loaded polymer matrix does not comprise a precise/ exact uniform distribution of the metal in the polymer matrix. It is therefore inherent that at least some small portion of the Collins et al. liner comprises a somewhat different ratio of metallic filler to polymer matrix than other portions of the Collins et al. liner.

Regarding claim 29, it is inherent that the metallic filler of the Collins et al. liner is not precisely/ exactly uniformly distributed throughout its extent.

Regarding claim 30, it is inherent that the thickness of the Collins et al. liner is not precisely/ exactly uniform in thickness throughout its extent.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-13, 17, 18 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins et al. (US 6,371,219 B1).

Regarding claims 10 and 11, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the metallic filler volume in the range 45% to 85% or in the range 45% to 65%, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 12 and 13, to size the metallic filler particles of a substantially uniform size that lies in the range of 10-250 nm would have been an obvious design choice within the skill level of one of ordinary skill in the art at the time that the invention was made.

Regarding claim 17, to provide the ratio of metallic filler density to matrix density being substantially unity would have been an obvious design choice within the skill level of one of ordinary skill in the art at the time that the invention was made.

Regarding claim 18, to provide the metallic filler with a density in the range between 0.5 gcm<sup>-3</sup> and 5 gcm<sup>-3</sup> would have been an obvious design choice within the skill level of one of ordinary skill in the art at the time that the invention was made.

Regarding claim 31, to match the density of metallic filler to the density of the plastics material in the Collins et al. liner would have been an obvious design choice within the skill level of one of ordinary skill in the art at the time that the invention was made.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins et al. (US 6,371,219 B1) in view of GB 968,507.

Collins et al. do not disclose that the filler is a fiber. However, GB 968,507 discloses a fiber filler in a shaped charge liner (see at least claims 1 and 2). To include fiber filler in the Collins et al. liner would have been an obvious design choice within the skill level of one of ordinary skill in the art at the time that the invention was made.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES S. BERGIN whose telephone number is (571)272-6872. The examiner can normally be reached on Monday - Wednesday and Friday, 8.30 - 5.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James S. Bergin/

Primary Examiner, Art Unit 3641